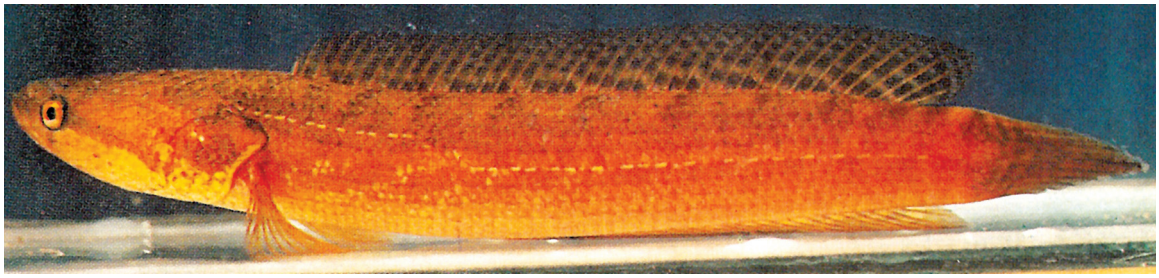
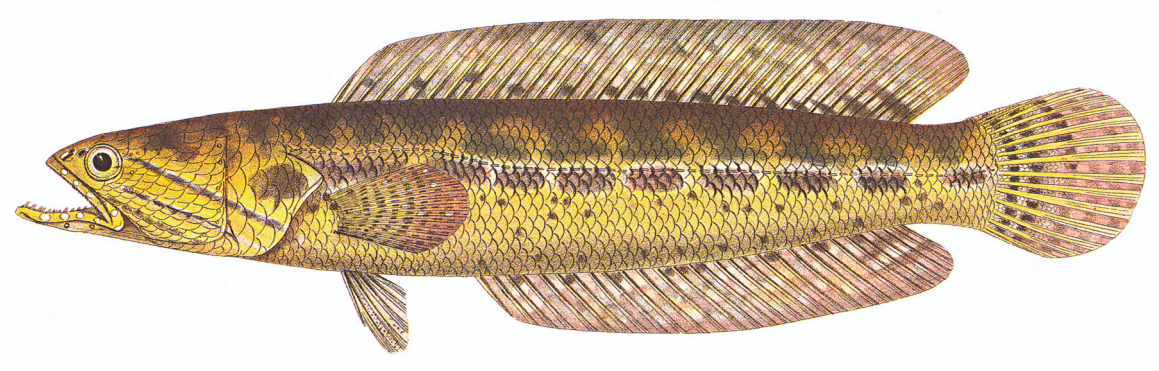
Channa bankanensis (Bleeker, 1852)
Bangka Snakehead



Reprinted with permission from P.K.L. Ng from: Lee, P.G., and P.K.L. Ng. 1991. The snakehead fishes of the Indo-Malayan region. Nature Malaysiana 16(4):112-129.



After Bleeker, 1878

Original description: *Ophiocephalus bankanensis* Bleeker, 1852:726. Nieuwe bijdrage tot de kenne der ichthyolische fauna van het eiland Banka. Natuurkd. Tijdrschr. Neder. Indië 3:715-738. Type locality: Bangka Island, Malaysia. Locality of holotype unknown.

Synonyms: No known synonyms (Ng and Lim, 1990).

Common names: **Bangka** (or Banka) **snakehead**; runtuk (Kalimantan).

Native range: Sumatra: southeastern rivers (Hari and Musi basins) of mainland; Bangka Island; rivers of central, southern, and western Kalimantan (southern Borneo; Roberts, 1989; Ng and Lim, 1991; Kottelat and others, 1993); peat swamps of Selangor, peninsular Malaysia (Lee and Ng, 1991).

Introduced Range: No introductions known.

Size: No specific information; Musikasinthorn (2000) examined specimens up to 14 cm standard length.

Habitat preference: Prefers submerged vegetation in tannin and humic acid enriched backwaters (pH 2.8-3.8) and moderately fast-flowing streams in peat swamps (Lee and Ng, 1991; Ng and Lim, 1991). Also found in mouths and middle reaches of rivers (Lee and Ng, 1994).

Temperature range: Preferred range 26-30 ºC (Lee and Ng, 1994).

Reproductive habits: No specific information, but likely a nest builder with pelagic eggs.

Feeding habits: No specific information, but probably a carnivorous predator.

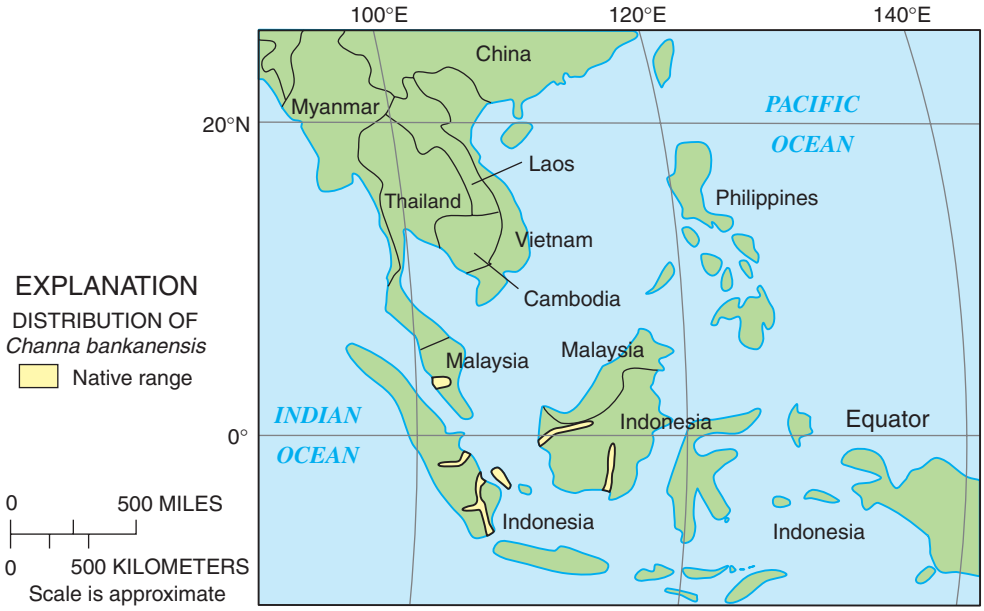
Characters: Patch of scales present on gular part of head. Large canine-like teeth on prevomer and palatines. Lateral line scales 55-68; scale rows between lateral line and dorsal origin 4½; scale rows below lateral line and anal fin origin 7-9; preopercular scales 5-10.

Dorsal fin rays 31-45, anal fin rays 20-31. Superficially resembles *Channa lucius*, head taller and more blunt in *C. bankanensis* (see Ng and Lim, 1990, p. 142, fig. 5C, D), and body more compressed in *C. lucius* (Lee and Ng, 1991). Somewhat rounded, dark blotch on operculum of adult, not elongated as in *C. lucius* (Ng and Lim, 1990).

Commercial importance in the United States: Not listed on aquarist-oriented websites.

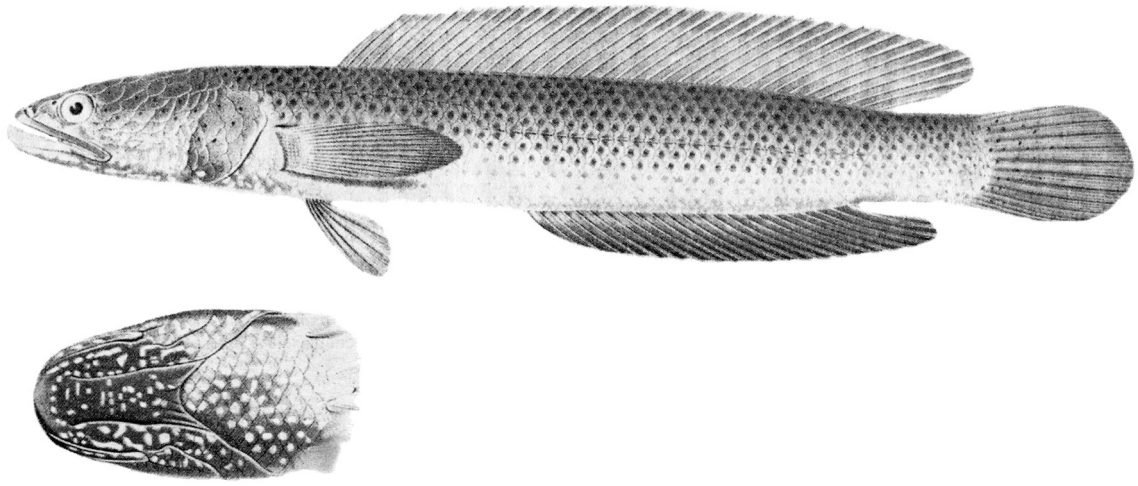
Commercial importance in native range: Probably not of commercial importance due to habitat preferences. Lee and Ng (1991) stated that this species is not popular with local anglers due to its small size.

Environmental concerns: Unknown, but probably a predator on other fishes and invertebrates. Habitat preferences indicate the species might only become problematic in highly acidic waters. Stoye (1935) mentioned availability of this species as an aquarium fish.

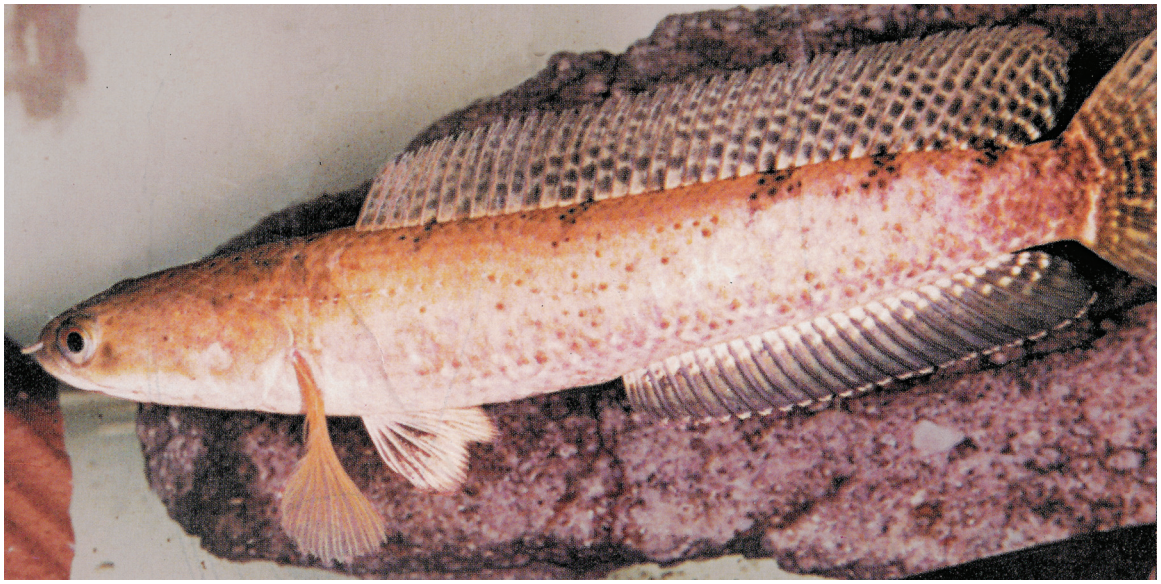


Channa bankanensis

Channa baramensis (Steindachner, 1901)
Baram Snakehead



After Steindachner, 1901



Live coloration (14.7 cm)

Reprinted with permission from H.H. Ng and P.K.L. Ng from: Ng, H.H., and others, 1996. Revalidation of *Channa baramensis* (Steindachner, 1901), a species of snakehead from northern Borneo (Teleostei: Channidae). Sarawak Mus. J. 48(69 n.s.):219-226.

Original description: *Ophicephalus baramensis* Steindachner, 1901:435, pl. 17. Kükenthal's Ergebnnisse einer zoologischen Forschungriese in den Molukken und Borneo. Abh. Senckenb. Naturforsch. Ges. 25:409-464, pls. 17-18. Type locality: Baram River, northern Sarawak (northern Borneo). Syntypes: SMF 860; SMF 8473.

Synonyms: *Ophicephalus melasoma* (Bleeker, 1851) *fide* Weber and de Beaufort (1922); Myers and Shapovalov (1932); Roberts (1989); Ng and Lim (1990); and Rainboth (1996). Ng and others (1996) revalidated the species and Musikasinthorn (2000) also recognized the species as valid.

Common names: **Baram snakehead**; barama snakehead.

Native range: Northern Sarawak, Brunei, and western Sabah (northern Borneo). Also occurs in the Sadong basin, southern Sarawak, and the Segama basin, eastern Sabah (Martin-Smith and Hui, 1998).

Introduced range: None.

Size: To about 22 cm.

Habitat preference: Known from blackwater swamps (Ng and others, 1996) and small to moderate-sized streams, clear or turbid, in secondary growth or forest areas (Inger and Kong, 1962).

Temperature range: No specific information, but native range is tropical (about 3-6º N).

Reproductive habits: Habits can be inferred from those of its closest relative, *Channa melasoma*. Doubtlessly a nest builder like other channids with probably only one parent guarding eggs and young. Likely a nocturnal species.

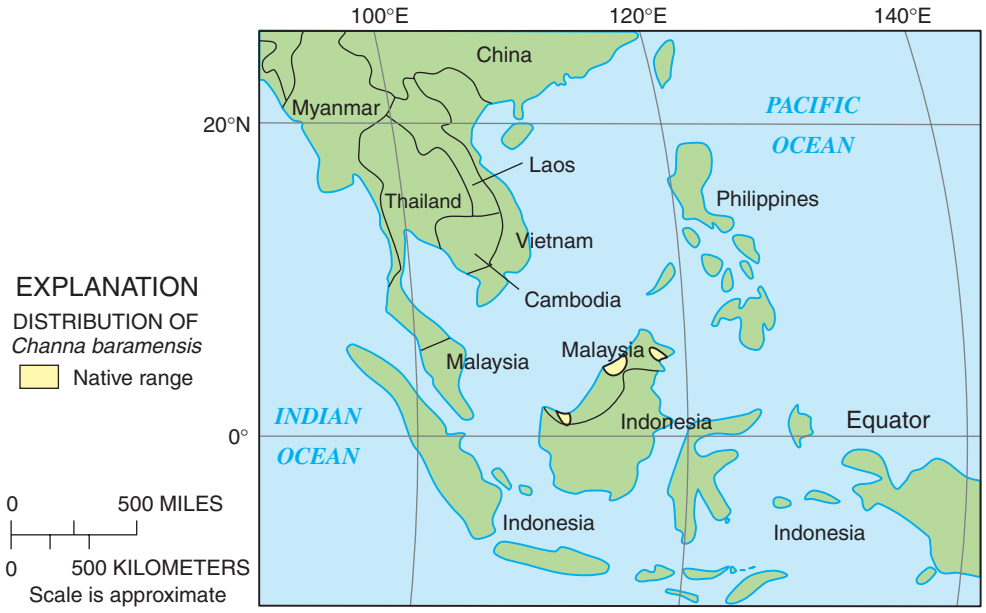
Feeding habits: Like *Channa melasoma*, probably a nocturnal thrust predator that feeds on other fishes, small reptiles, crabs, insects and insect larvae.

Characters: No patch of scales on gular region. Dorsal fin rays 38-40; anal rays 23-26. Predorsal scales 8-9; lateral line scales 51-52. This species appears to be most closely related to *Channa melasoma*, and some characters overlap in both species (Ng and others, 1996). Nevertheless, adults (120 mm or more standard length) can be separated as follows: Lateral head profile of *C. melasoma* distinctly sharper. Postorbital depth greater in *C. baramensis* than in *C. melasoma* (33.3-34.1 percent of head length versus 27.9-31.8 percent of head length in *C. melasoma*) (Ng and others, 1996). There are also distinct differences in coloration. In closely related *C. melasoma* and *C. cyanospilos*, black pigment (melanin) appears as evenly spread over each scale, whereas in *C. baramensis*, melanin is concentrated in the central part of most scales in adults and most specimens smaller than 120 mm standard length. Moreover, there is a distinct barred pattern on the caudal fin in adult *C. baramensis* that is absent in *C. melasoma* and *C. cyanospilos* of similar lengths. This character, however, cannot be used to identify specimens smaller than about 120 mm standard length (Ng and others, 1996).

Commercial importance in the United States: Unknown to have been imported for any purpose.

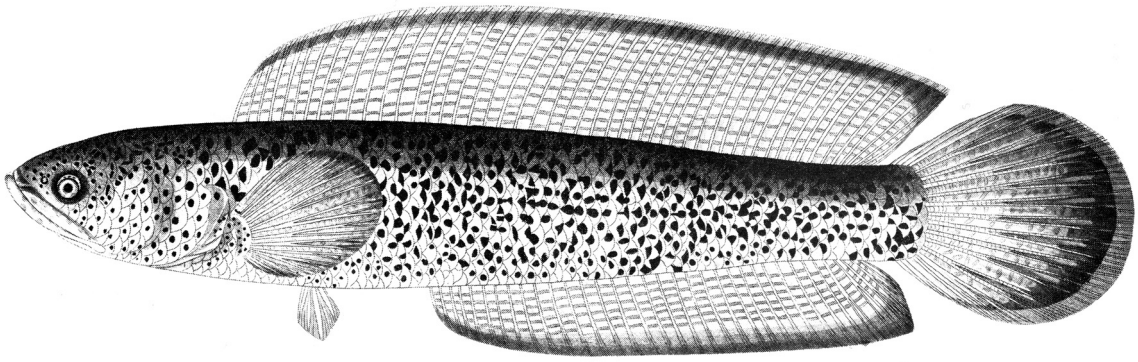
Commercial importance in native range: Reported as caught by anglers, indicating use as a food fish (Ng and others, 1996). Probably only of minor commercial importance.

Environmental concerns: This species is probably a nocturnal thrust predator. Its limited range in the tropics would restrict its ability to establish in all but the warmest waters of the U.S.



Channa baramensis

Channa barca (Hamilton, 1822)
Barca Snakehead



After Hamilton, 1822

Original description: *Ophiocephalus barca* Hamilton, 1822:67, pl. 35, fig. 20. An account of the fishes found in the River Ganges and its branches. Edinburgh and London. i-vii + 1-405, pls. 1-39. Type locality: Brahmaputra River, near Goalpara, Assam, India. Types unknown.

Synonyms: *Ophicephalus nigricans* Cuvier, 183:431.

Common name: barca snakehead.

Native range: Endemic to Ganges and Brahmaputra River basin, India and Bangladesh (Musikasinthorn, 2000). Bhuiyan (1964) cited its presence in eastern and some areas of western Pakistan but this may be a misidentification.

Introduced range: No introductions known.

Size: To 90 cm (Talwar and Jhingran, 1992).

Habitat preference: Large rivers (Talwar and Jhingran, 1992).

Temperature range: No specific information. Nevertheless, its native range is located between about 25-27º N, suggesting it is a warm temperate species.

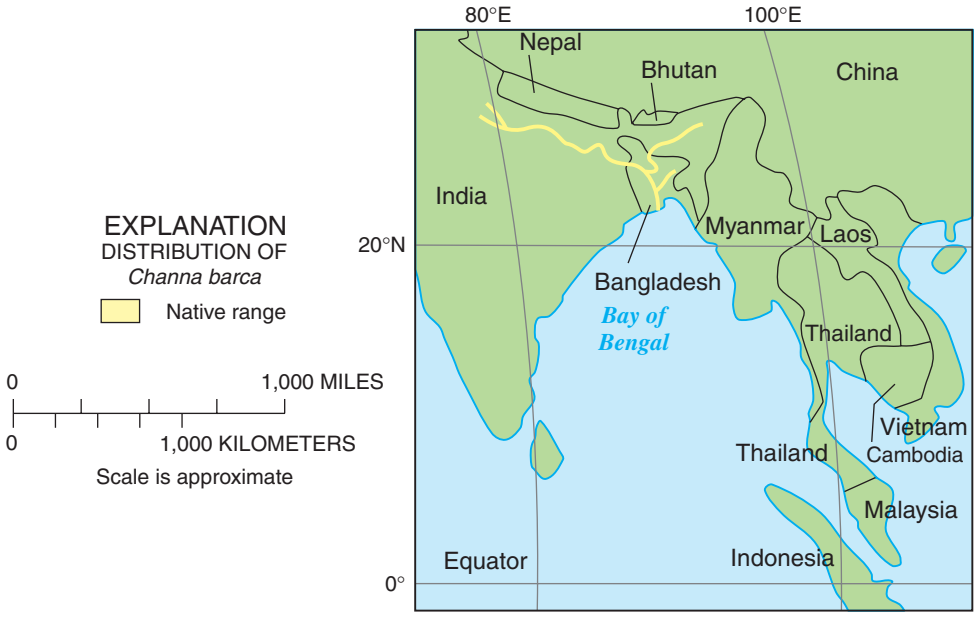
Reproductive habits: No detailed information, but like other snakehead species, it is assumed to clear a nest in nearshore vegetation, lay pelagic eggs which, following fertilization, rise to the surface where they are guarded vigorously by one or both parents until hatching.

Characters: Body elongated, mostly rounded. Mouth large; lower jaw with a few canines behind a single row of villiform teeth that widen to 5 or 6 rows at jaw symphysis; 2 or 3 large teeth on vomer and some on palatines. Scales on top of head large; 9 scale rows between preopercular angle and posterior border of orbit; predorsal scales 15; 60 to 65 scales in longitudinal series. Dorsal fin rays 47-52; anal fin rays 34-36; pectoral rays 16; pelvic fin rays 6. Life colors violet on back fading to dull white with purple cast on sides; back and sides with large black blotches, as are dorsal, anal, and caudal fins; fin edges red; pectoral fins red with numerous black spots.

Commercial importance in the United States: Typically not listed on aquarist-oriented websites. Likelihood of being imported for sale in aquarium fish trade or live-food fish markets has been low to probably nonexistent.

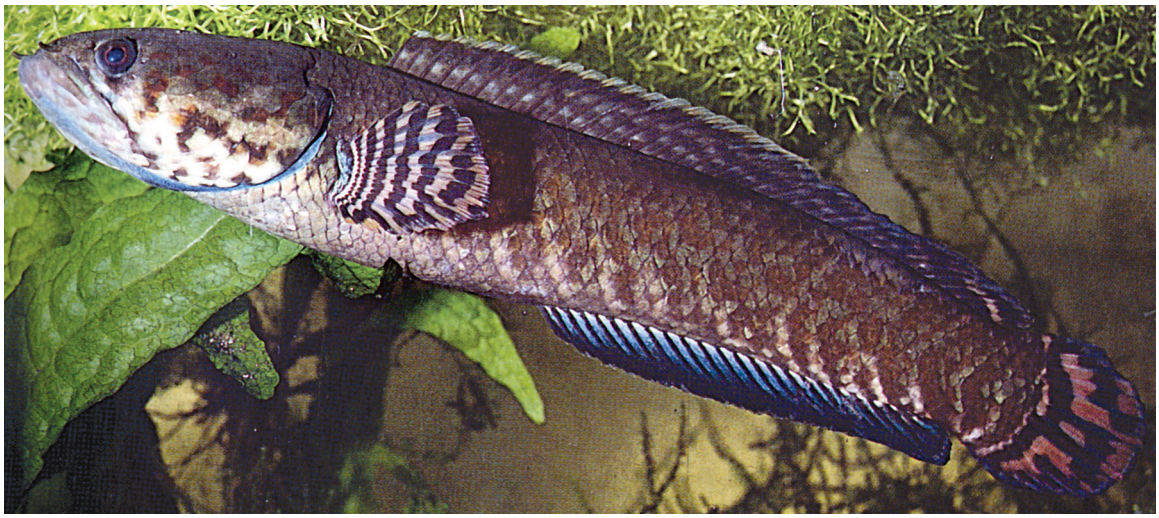
Commercial importance in native range: While reported as common in the Brahmaputra River, Assam, India, it is said to be of minor importance as a fishery resource. Nevertheless, it is considered an excellent food fish (Talwar and Jhingran, 1992).

Environmental concerns: Like other snakeheads, adults are carnivorous predators, most preferring other fishes as food.



Channa barca

Channa bleheri Vierke, 1991
Rainbow Snakehead



Reprinted with permission from Jörg Vierke from: Vierke, Jörg. 1991a. Ein farbenfroher neuer schlangenkopffish aus Assam *Channa bleheri* spec. nov. Das Aquarium 259:21.

Original description: *Channa bleheri* Vierke, 1991a:20-24. Ein farbenfroher neuer Schlangenkopffisch aus Assam *Channa bleheri* spec. nov. Das Aquarium 259:20-24. Type locality: upper part of Dibru River, near Guijan, Brahmaputra River basin, northeastern Assam, India. Holotype: ZFMK 16555. Paratype: ZFMK 16556.

Synonyms: No synonyms.

Common name: rainbow snakehead.

Native range: Endemic to the Brahmaputra River basin, Assam, India (Musikasinthorn, 2000).

Introduced Range: No introductions known.

Size: To about 20 cm.

Habitat preference: Forest streams, ponds and swamps in tropical rainforest conditions (Musikasinthorn, 2000).

Temperature range: Unknown, except preferred habitat and known range is subtropical.

Reproductive habits: No specific information concerning wild populations. Vierke (1991b), however, described reproductive behavior in aquaria in detail. He noted that females are smaller than males of the same age, and that males grow faster than females. A male selects the nesting site, but it is the female that appears to initiate courtship behavior. Two days prior to spawning, there is frequent body contact between male and female, with the two wrapping around each other. This behavior increases at spawning, near the surface, and the spawning act can last up to 30 seconds.

The eggs released are transparent and float to the surface. They are small, round, and 0.9-1.1 mm in diameter. An oil globule, about 0.6-0.7 mm in size, is present in each egg. The egg mass, with eggs close together, appears to be made of foam. Both the male and female initially tend the egg mass and display an interesting behavior. They take the eggs into the oral cavity and expel them through the gills, presumably to remove materials that may settle on egg surfaces. The eggs adhere to each other at the surface. Following hatching, both parents guard the larvae.

The young remain around the parents, often with body contact between them. Young can often be found on the heads of parents, appearing to be feeding on mucus.

They appear to nip the parents, and removal of young from parents at this stage seems to slow growth of the separated individuals.

Feeding habits: No information concerning wild populations, but likely a carnivorous predator as an adult. Vierke (1991b) noted that in aquaria, rainbow snakeheads will feed on worms similar to bloodworms. When fed guppies (*Poecilia reticulata*), they will eat guppies they can easily catch, but typically tire of chasing this prey, eventually tolerating their presence.

Characters: No area of scales in gular region. No pelvic fins. Dorsal rays 36-37; anal rays 24; predorsal scales 6-7; lateral line scales 45-46. One or 2 large scales on undersurface of lower jaw.

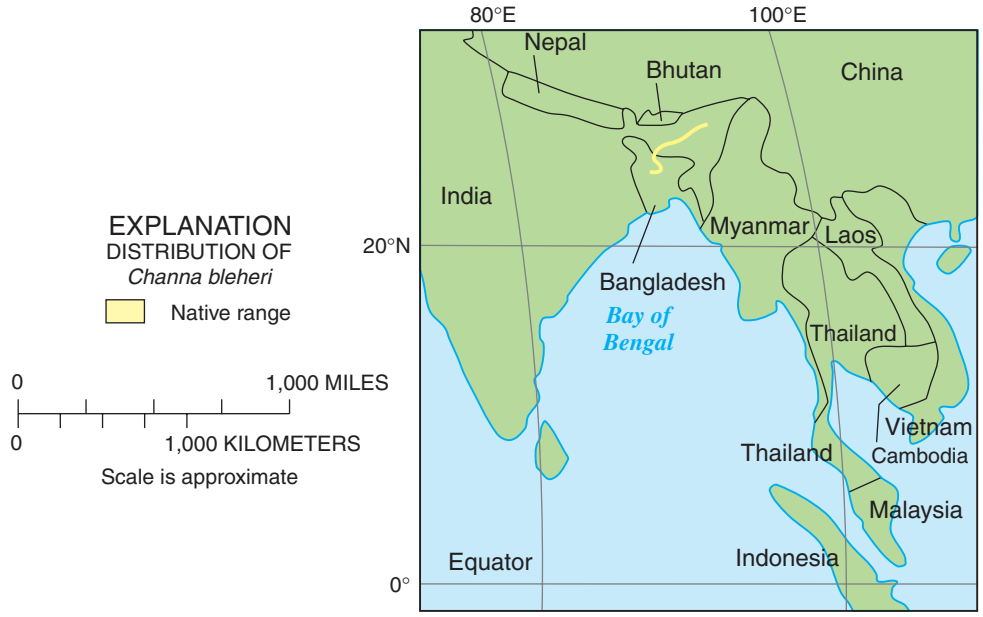
Live adults have large irregular red or orange spots (white in preserved specimens) that sometimes coalesce (Musikasinthorn, 2000). This is the most colorful of all snakehead species. Newly hatched larvae are colorless. When they reach a length of 1 cm, the dorsum and sides of the body becomes "canary" yellow, with a dark bar on the head, angled from the tip of the lower jaw, through the eye, to the upper margin of the operculum; the ventral side is colored smoke gray to black. As young continue to grow, their color becomes more pale and an ocellus appears on the posterior part of the dorsal fin. Later they begin to change to adult coloration (Vierke, 1991a).

This species appears to be most closely related to *Channa burmanica* (Peter Ng, personal commun., *in* Vierke, 1991b). They differ in several characters. *Channa burmanica* has 51 lateral line scales, 28 anal rays, and 8 predorsal scales, whereas these counts in *C. bleheri* are 45-46, 24, and 6-7, respectively. The rainbow snakehead also has a longer caudal peduncle than *C. burmanica* with 9 scales from the posterior end of the anal fin to the caudal fin base in *C. bleheri* and 4+2 in *C. burmanica* (Vierke, 1991b).

Commercial importance in the United States: This species is sometimes listed on aquarist-oriented websites and has been available for sale through aquarium fish retailers. Because of its attractive coloration, it appears to have been increasing in popularity as an aquarium species. An aquarium fish dealer in Kentucky was found to be selling this species illegally, having imported them from a supplier in Atlanta, Georgia, where snakeheads are also illegal (Major David Casey, personal commun., 2002).

Commercial importance in native range: This species is caught commercially for the aquarium fish trade (Ralf Britz, personal commun., 2002) and is not known to be cultured for this purpose.

Environmental concerns: If released into U.S. waters, it could become established in subtropical Florida, Hawaii, perhaps southeastern Texas, and thermal springs and their outflows in western states. Probably predacious on other fishes.



Channa bleheri